

1. A method of making a cartilaginous prosthesis comprising seeding a polymeric matrix construct with chondrocytes and contacting the seeded construct with a hedgehog therapeutic.
- 5 2. The method of claim 1, wherein the chondrocytes are articular chondrocytes.
3. The method of claim 2, wherein the hedgehog therapeutic is a naturally-occurring hedgehog polypeptide.
- 10 4. The method of claim 2, wherein the hedgehog therapeutic is a hydrophobically-modified hedgehog polypeptide.
5. The method of claim 3, wherein the hydrophobically modified hedgehog polypeptide is di-palmitoyl sonic hedgehog or dipalmitoyl indian hedgehog.
- 15 6. The method of claim 4, wherein the seeded construct is contacted with di-palmitoyl hedgehog at a concentration of at least 500 ng/ml.
- 20 7. The method of claim 4, wherein the seeded construct is contacted with di-palmitoyl sonic hedgehog at a concentration of between 500 and 1000 ng/ml
8. The method of claim 1, wherein the polymeric matrix is selected from the group consisting of polyglycolid acid, collagen, dextran sulfate, polyanhydride, polyorthoester, hyaluronic acid-based polymers, and a glycosaminoglycan.
- 25 9. The method of claim 6, wherein the polymeric matrix is polycolid acid.
- 30 10. A tissue culture system for the production of cartilage comprising a polymeric matrix, chondrocytes adherent to the matrix and a culture medium comprising an amount of a hedgehog therapeutic sufficient to cause an increase in the

proteoglycan content of the cartilage, compared to the content in absence of the hedgehog therapeutic.

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11. The tissue culture system of claim 10, in which the hedgehog therapeutic is a naturally occurring hedgehog polypeptide.
12. The tissue culture system of claim 11, in which the hedgehog polypeptide is sonic hedgehog or indian hedgehog.
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13. The tissue culture system of claim 10, in which the hedgehog therapeutic is a hydrophobically modified hedgehog polypeptide.
14. The tissue culture system of claim 13, in which the hedgehog therapeutic is dipalmitoyl sonic hedgehog or dipalmitoyl indian hedgehog.
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15. The tissue culture system of claim 14, in which the amount of the hedgehog therapeutic is between 500 and 1000 ng/ml.